Teachers as (re-)designers of an ICT-rich learning environment for early literacy

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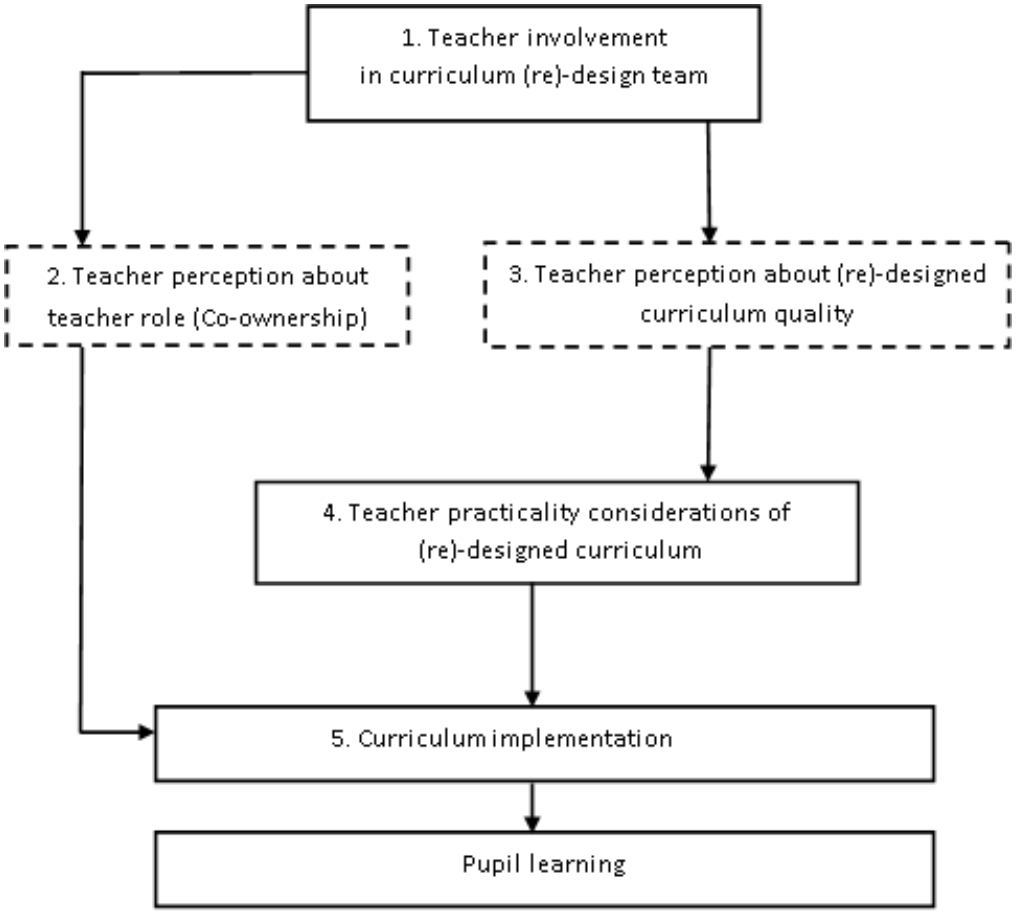
Research problem

- ICT integraton in primary schools: a gap between proposed and implemented ICT integrated teachnig / learning (e.g. Tondeur, van Braak & Valcke, 2007)
- Early childhood settings still lag substantively behind in embracing the potential of ICT integration' (Parette, Quesenberry & Blum, 2009)

Prior research



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Introduction

Prior research

Teacher involvement in development of an innovative curriculum has a potential to:

- impact positively curriculum implementation (Ertmer & Ottenbreit-Leftwich, 2009) and
- enhance early literacy development in pupils (McGill-Franzen et al.,1999) through

teacher experiences of

- the role of re-(designer), (Becker & Riel, 2000) and taking co-ownership of an innovative curriculum (Fullan, 2003);
- curriculum value/quality, (Abrami, Poulsen & Chambers, 2004) and
- practicality considerations prior to curriculum enactment (Doyle & Ponder, 1977).

Research design

Problem statement

What form of teacher participation in curriculum development (redesigner, co-designer) is optimal for effective implementation of an ICT-integrated curriculum for early literacy?

Context

Integration of meaningful ICT integrated activities for 4-5 yrs. old pupils in Dutch kindergarten early literacy curricula

- Teachers recognize a curriculum gap;
- Teacher have the will to work together on and teach early literacy through ICT integrated learning activities

Reseach design

- *Case study 1*

4 teachers participated in *Redesign*.

Teachers were asked to

I. adapt an existing PictoPal curriculum in a team and

II. implement the redesigned curriculum in classes

- *Case study 2*

3 teachers participated in *Co-design*

In the design team, teachers were asked to

I. co-design a new PictoPal module, inspired by a PictoPal demo version and

II. implement designed curriculum

PictoPal an ICT rich curriculum for emergent literacy

Fig 1 On computer emergent literacy activities

Fig 2 Off computer emergent literacy activities

Research method

Instruments

- Interviews, team process accounts, observations integration of on-and off computer activities, pre-post test emergent literacy

- Participants pupils

  n = 87 (Teacher as redesigners)

  n = 20 (Teacher designer)

  n = 49 (control)

Findings

Redesign team: exchange of perspectives, equal contribution, team outcome, experience of co-ownership, doubts taking the role of redesigner, practicality (pupils needs/ perception of teaching and technological affordances incompatible)

Design team: exchange of perspectives, equal contribution, team outcome, experience of co-ownership, positive perceptions curriculum quality and practicality

Implementation: Extent of integration of on- and off computer activities higher in designer class

Pupil learning: Overall, PictoPal enhances pupil learning.

Pupils learning with designed curriculum score higher on pretest compared to pupils learning with redesigned curriculum

Conclusion and discussion

- Teacher involvement: the role as designer seems more feasible and optimal for effective enactment of PictoPal-curriculum.

  More data needed to support the initial findings on design team process, design integration and pupil learning

- Redesigners perceptions of teaching/learning and practicality: pupil needs – technological affordances

- PictoPal enhances pupil learning outcomes in both cases

Implication: support
explaining redesigner role in terms of benefits of involvement for teachers:

(a) understanding how to use curriculum / apply ICT-rich activities
(b) understanding why technology is important to young children (Blum, 2009).

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